

CLAIMS

What is claimed is:

1. A lighting system comprising:

a. a housing;

5 b. a mounting assembly that is received by the housing and which comprises a frame having an annular flange and two retainer walls extending perpendicularly to the plane of the flange and parallel to each other on opposite sides of the opening defined by the flange;

10 c. a contour light projector that is mounted on the mounting assembly; and

d. a light beam contour mask that is received by the projector.

2. A lighting system as defined in Claim 1 wherein the light projector further comprises:

a. a housing assembly;

15 b. a lamp;

c. a condensing lens;

15 d. an optical bench mounted within the housing, and which comprises an elongate base to which at least one clamp is attached to hold the lamp and the condensing lens; and

20 e. an objective lens.

3. A lighting system as defined in Claim 1 wherein the mask comprises a plurality of shutter blades arrayed about the central axis of a holding ring as part of the light projector and held between the ring and a seating surface as part of the light projector such that the blades may be selectively manipulated between

the ring and the seating surface to determine a contour for a light beam produced by the projector, wherein each blade has a concave edge toward the central axis of the holding ring, and wherein each blade has a tab, and one blade has two tabs extending laterally in opposite directions from that blade, such that
5 the blades may be manipulated by the tabs to effect the contour of the light beam,

4. A lighting system as defined in Claim 1 wherein the mask comprises a glass plate having affixed thereto a photosensitized tape that is exposed to light and developed, and in which tape an opening is made to determine a contour for
10 a light beam produced by the projector.

5. A lighting system as defined in Claim 1 wherein the frame may be rotated in the plane, defined by the flange, relative to the housing.

6. A lighting system as defined in Claim 1 wherein the mounting assembly further comprises:

15 a. a saddle including a cross member and two end walls extending perpendicularly to the cross member and parallel to each other at opposite ends of the cross member, and a curved seat at the middle of the cross member on which the light projector may be selectively positioned and fixed to the saddle; and

20 b. a dual pivot system, as parts of the retainer walls and the end walls, providing two pivot axes whereby the saddle may pivot in a first arc about a first pivot axis relative to the frame and may pivot in a second arc about a second pivot axis relative to the frame.

7. A lighting system as defined in Claim 6 further comprising:

a. the housing comprising an enclosure having sides, a removable top, and a bottom that is broken by a hole;

b. a plate, including a light projection hole to receive the end of the light projector for projection of a light beam out of the housing; and

5 c. spring hangers by which the plate is suspended from the mounting assembly and held against the bottom of the enclosure to cover the hole in the bottom of the enclosure.

8. A lighting system as defined in Claim 7 wherein the housing further comprises a panel which is joined to the bottom of the enclosure, and which has
10 a hole that aligns generally with the bottom hole of the enclosure and receives the plate when the plate is held against the bottom of the enclosure, and which panel can be floated with adjoining ceiling surface to form a continuation of the finished ceiling.

9. A lighting system as defined in Claim 6 further comprising:

15 a. the housing comprising a round-sided enclosure having a top and an open bottom;

b. multiple retaining clips, with each clip providing a horizontal plate passing through a slot in the side of the housing above the top of a ceiling to support the housing by the ceiling, a vertical plate extending along the inside of
20 the housing by which the clip is joined to the housing side by a connector, and a guide pin extending downwardly;

c. the mounting assembly annular flange being broken by guide holes which receive the guide pins as aids in positioning the mounting assembly relative to the enclosure, and holes through which screws are passed to

threadedly connect to the horizontal plates of the retaining clips to anchor the housing to the ceiling;

d. a plate including a light projection hole in the housing to receive the end of the light projector for projection of a light beam out of the housing;

5 and

e. spring hangers by which the plate is suspended from the mounting assembly and held against the bottom of the enclosure to cover the bottom of the enclosure.

10. A lighting system as defined in Claim 1 further comprising:

10 a. the housing comprising an enclosure having sides, a removable top, a bottom that is broken by a hole, and a heat guard that is rotatable within the bottom hole and which provides a light projection hole for projection of a light beam out of the housing; and

15 b. a strap connected to the light projector and to the two retaining walls to hold the light projector with the end of the light projector positioned in the light projection hole.

11. A contour light projector comprising:

20 a. a housing assembly;

b. a lamp;

c. a condensing lens;

25 d. an optical bench mounted within the housing, and which comprises an elongate base to which at least one clamp is attached to hold the lamp and the condensing lens;

e. a light beam contour mask; and

f. an objective lens.

12. A contour light projector as defined in Claim 11 further comprising:

- a. the elongate base having a flat surface; and
- b. one or more clamps, with each clamp comprising a strip folded to form at least five planes with a set of openings arrayed in at least the two end planes, and with the clamp attached to the flat surface of the base at the central plane of the clamp, whereby the array of openings is in a plane perpendicular to the longitudinal axis of the base;
- c. whereby a lens and the lamp may each be received by an array of slots in a clamp and thereby held to the optical bench.

10 13. A contour light projector as defined in Claim 12 further comprising at least one clamp having multiple arrays of openings located at different locations along the longitudinal axis of the base.

14. A contour light projector as defined in Claim 12 wherein the base of the optical bench has multiple flat surfaces in parallel planes at different lateral distances from the longitudinal axis of the base, and to which flat surfaces clamps may be attached.

15. A contour light projector as defined in Claim 11 further comprising a diffusing filter positioned between the lamp and the condensing lens.

16. A mounting assembly for receiving and holding a light projector, comprising the following:

- a. a frame including an annular flange and two retainer walls extending perpendicularly to the plane of the flange and parallel to each other on opposite sides of the opening defined by the flange;

b. a saddle including a cross member and two end walls extending perpendicularly to the cross member and parallel to each other at opposite ends of the cross member, and a curved seat at the middle of the cross member on which the light projector may be selectively positioned and fixed to the saddle;

5 and

c. a dual pivot system, as parts of the retainer walls and the end walls, providing two pivot axes whereby the saddle may pivot in a first arc about a first pivot axis relative to the frame and may pivot in a second arc about a second pivot axis relative to the frame.

10 17. A mounting assembly as defined in Claim 16 further comprising multiple slots along the seat for receiving a bolt that is threaded into the light projector whereby the light projector may be anchored at selected positions along the seat.

15 18. A mounting assembly as defined in Claim 16 wherein the dual pivot system comprises:

a. two pivot receptacles spaced apart in each retainer wall and two guide receptacles spaced apart in each retainer wall;

b. a pivot hole and an arcuate guide slot in each of the two end walls;

c. two pivot members and two guide members;

20 d. each pivot member passing through the pivot hole of an end wall and one of the two pivot receptacles of a retainer wall, with the two pivot members determining a pivot axis, whereby the saddle may pivot about the pivot axis thus determined by the positions of the two pivot members; and

e. each guide member passing through a guide slot in an end wall and

25 one of the two guide receptacles of a retainer wall whereby the pivoting of the

saddle is constrained by the movement of the guide slots along the guide receptacles.

19. A mounting assembly as defined in Claim 18 further comprising the guide members selectively locked in the guide receptacles to hold the saddle 5 fixed against pivoting movement relative to the frame.

20. A contour light projector mask comprising a plurality of shutter blades arrayed about the central axis of a holding ring of the light projector and held between the ring and a seating surface of the light projector such that the blades may be selectively manipulated between the ring and the seating surface to 10 determine a contour for a light beam produced by the projector, wherein each blade has a concave edge toward the central axis of the holding ring, and wherein each blade has a tab, and one blade has two tabs extending laterally in opposite directions from that blade, such that the blades may be manipulated by the tabs to effect the contour of the light beam.

15 21. A contour light projector mask comprising a glass plate having affixed thereto a photosensitized tape that is exposed to light and developed, and in which tape an opening is made to determine a contour for a light beam produced by the projector.